

**What is claimed is:**

1. A computer-implemented method of matching customer demand with a manufacturer supply of products from plurality of factory facilities, comprising using  
5 a computer to perform the steps of:
  - inputting demand data for a demand of at least one product requested by at least one customer and supply data corresponding to the production capacity of the factory  
10 facilities;
  - performing a first matching operation to match the demand data with the supply data to obtain a first demand-supply matching result;
  - 15 collecting rematched demand data corresponding to a portion of the demand unsatisfied by the first matching operation from the demand data and collecting rematched supply data corresponding to a portion of the unused  
20 capacity in the first matching operation from the supply data;
  - classifying the rematched demand data into a plurality of classified demand data records according to at least one attribute of the  
25 corresponding products and customers, the classified demand data having different priorities; and
  - performing a second matching operation to match the classified demand data with the  
30 rematched supply data based on the priorities of the classified demand data to obtain a second demand-supply matching result.

2. The computer-implemented method as claimed in claim 1, wherein the first matching operation step further comprises the steps of:

5        recording the first demand-supply matching result; and  
      updating the demand data and the supply data according to the first demand-supply matching result.

3. The computer-implemented method as claimed in claim 1, wherein the second matching operation step further comprises the steps of:

5        recording the second demand-supply matching result; and  
      updating the demand data and the supply data according to the second demand-supply matching result.

4. The computer-implemented method as claimed in claim 1, wherein the demand data is defined by creating a demand table, the demand table characterizing the relationship between customer  
5        demand, the factory facilities, and manufacturing processes for the product as provided thereby.

5. The computer-implemented method as claimed in claim 1, wherein the supply data is defined by creating a supply table, the supply table characterizing the relationship between the factory  
5        facilities, the capacity and manufacturing processes provided by the factory facilities.

6. The computer-implemented method as claimed in claim 1, wherein the rematched demand data is defined by creating a rematched demand table that characterizes the relationship between unsatisfied  
5 demand, the factory facilities, and manufacturing processes for the product as provided thereby.

7. The computer-implemented method as claimed in claim 1, wherein the rematched supply data is defined by creating a plurality of rematched supply tables, the rematched supply tables characterizing the  
5 available factory facilities of the manufacturing processes, the manufacturer preferred factory facilities under cost consideration, and the customer preferred factory facilities.

8. The computer-implemented method as claimed in claim 1, wherein the attributes of the corresponding products and customers are new customers and manufacturing processes of the product, existing  
5 customers and new manufacturing processes of the product, and existing customers and manufacturing processes of the product.

9. A storage medium for storing a computer program providing a method of matching customer demand with a manufacturer supply of a product from a plurality of factory facilities, the method comprising

5 the steps of:

inputting demand data for a demand of at least one product requested by at least one customer and supply data corresponding to the production capacity of the factory

10 facilities;

performing a first matching operation to match the demand data with the supply data to obtain a first demand-supply matching result;

15 collecting rematched demand data corresponding to a portion of the demand unsatisfied in the first matching operation from the demand data and collecting rematched supply data corresponding to a portion of the unused

20 capacity in the first matching operation from the supply data;

classifying the rematched demand data into a plurality of classified demand data records according to attributes of the corresponding

25 products and customers, the classified demand data having different priorities; and

performing a second matching operation to match the classified demand data with the rematched supply data based on the

30 priorities of the classified demand data to obtain a second demand-supply matching result.

10. The storage medium as claimed in claim 9, wherein the first matching operation step further comprises the steps of:

- 5 recording the first demand-supply matching result; and
- updating the demand data and the supply data according to the first demand-supply matching result.

11. The storage medium as claimed in claim 9, wherein the second matching operation step further comprises the steps of:

- 5 recording the second demand-supply matching result; and
- updating the demand data and the supply data according to the second demand-supply matching result.

12. The storage medium as claimed in claim 9, wherein the demand data is defined by creating a demand table, the demand table characterizing the relationship between customer demand, the factory  
5 facilities, and manufacturing processes for the product as provided thereby.

13. The storage medium as claimed in claim 9, wherein the supply data is defined by creating a supply table, the supply table characterizing the relationship between the factory facilities, the  
5 capacity and manufacturing processes for the product as provided by the factory facilities.

14. The storage medium as claimed in claim 9, wherein the rematched demand data is defined by creating a rematched demand table that characterizes the relationship between unsatisfied demand, the  
5 factory facilities, and manufacturing processes for the product as provided thereby.

15. The storage medium as claimed in claim 9, wherein the rematched supply data is defined by creating a plurality of rematched supply tables, the rematched supply tables characterizing the available  
5 factory facilities of the manufacturing processes, the manufacturer preferred factory facilities under cost consideration, and the customer preferred factory facilities.

16. The storage medium as claimed in claim 9, wherein the attributes of the corresponding products and customers are new customers and manufacturing processes of the product, existing customers and new  
5 manufacturing processes of the product, and existing customers and manufacturing processes of the product.

17. A system for matching customer demand with a manufacturer supply of a product from a plurality of factory facilities, comprising:

- 5           a match database, storing demand data for a demand of at least one product requested by at least one customer and supply data corresponding to the production capacity of the factory facilities;
- 10          a rematch database, storing rematched demand data and rematched supply data;
- a customer interface, enabling input of the demand data;
- a factory interface, enabling input of the supply data; and
- 15          a controller computer, coupled to the match database, the rematch database, the customer interface, and the factory interface, performing a first matching operation to match the demand data with the supply data
- 20          to obtain a first demand-supply matching result, collecting rematched demand data corresponding to a portion of the demand unsatisfied in the first matching operation from the demand data and collecting
- 25          rematched supply data corresponding to a portion of the unused capacity in the first matching operation from the supply data, classifying the rematched demand data into a plurality of classified demand data records
- 30          according to attributes of the corresponding products and customers, the classified demand data having different priorities, and performing a second matching operation to

35 match the classified demand data with the  
rematched supply data based on the  
priorities of the classified demand data to  
obtain a second demand-supply matching  
result.

18. The system as claimed in claim 17, wherein  
the controller computer further records the first  
demand-supply matching result, and updating the demand  
data and the supply data according to the first  
5 demand-supply matching result after the first matching  
operation.

19. The system as claimed in claim 17, wherein  
the controller computer further records the second  
demand-supply matching result, and updating the demand  
data and the supply data according to the second  
5 demand-supply matching result after the second  
matching operation.

20. The system as claimed in claim 17, wherein  
the demand data is defined by creating a demand table,  
the demand table characterizing the relationship  
between customer demand, the factory facilities, and  
5 manufacturing processes for the product as provided  
thereby.



21. The system as claimed in claim 17, wherein the supply data is defined by creating a supply table, the supply table characterizing the relationship between the factory facilities, the capacity and  
5 manufacturing processes for the product as provided by the factory facilities.

22. The system as claimed in claim 17, wherein the rematched demand data is defined by creating a rematched demand table that characterizes the relationship between unsatisfied demand, the factory  
5 facilities, and manufacturing processes for the product as provided thereby.

23. The system as claimed in claim 17, wherein the rematched supply data is defined by creating a plurality of rematched supply tables, the rematched supply tables characterizing the available factory  
5 facilities of the manufacturing processes, the manufacturer preferred factory facilities under cost consideration, and the customer preferred factory facilities.

24. The system as claimed in claim 17, wherein the attribute of the corresponding products and customers are new customers and manufacturing processes of the product, existing customers and new  
5 manufacturing processes of the product, and existing customers and manufacturing processes of the product.

25. A system of demand and capacity management, comprising:

- an allocation planning module to receive demand data for a demand of at least one product requested by at least one customer and supply data corresponding to production capacity of the factory facilities;
- a capacity model having route information for the product, wherein the route information records a plurality of tools; and
- a capacity management module to reserve capacity according to the demand data and the route information.

26. The system as claimed in claim 25, wherein the allocation planning module further comprises:

- a data input module, inputting the demand data the supply data;
- a first match module, performing a first matching operation to match the demand data with the supply data to obtain a first demand-supply matching result;
- a rematch data collection module, collecting rematched demand data corresponding to a portion of the demand unsatisfied in the first matching operation from the demand data and collecting rematched supply data corresponding to a portion of the unused capacity in the first matching operation from the supply data;
- a classification module, classifying the rematched demand data into a plurality of

20           classified demand data records according to  
          attributes of the corresponding products and  
          customers, the classified demand data having  
          different priorities; and  
          a second match module, performing a second  
          matching operation to match the classified  
25           demand data with the rematched supply data  
          based on the priorities of the classified  
          demand data to obtain a second demand-supply  
          matching result.

27. The system as claimed in claim 26, wherein  
the first match module further comprises:

          a first record module, recording the first  
          demand-supply matching result; and  
5           a first update module, updating the demand data  
          and the supply data according to the first  
          demand-supply matching result.

28. The system as claimed in claim 26, wherein  
the second match module further comprises:

          a second record module, recording the second  
          demand-supply matching result; and  
5           a second update module, updating the demand data  
          and the supply data according to the second  
          demand-supply matching result.

29. The system as claimed in claim 26, wherein the demand data is defined by creating a demand table, the demand table characterizing the relationship between customer demand, the factory facilities, and  
5 manufacturing processes provided by the factory facilities.

30. The system as claimed in claim 26, wherein the supply data is defined by creating a supply table, the supply table characterizing the relationship between the factory facilities, the capacity and  
5 manufacturing processes for the product as provided by the factory facilities.

31. The system as claimed in claim 26, wherein the rematched demand data is defined by creating a rematched demand table that characterizes the relationship between unsatisfied demand, the factory  
5 facilities, and manufacturing processes for the product as provided thereby.

32. The system as claimed in claim 26, wherein the rematched supply data is defined by creating a plurality of rematched supply tables, the rematched supply tables characterizing the available factory  
5 facilities of the manufacturing processes, the manufacturer preferred factory facilities under cost consideration, and the customer preferred factory facilities.

33. The system as claimed in claim 26, wherein  
the attribute of the corresponding products and  
customers are new customers and manufacturing  
processes of the product, existing customers and new  
5 manufacturing processes of the product, and existing  
customers and manufacturing processes of the product.